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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/385,020	08/30/1999	SHUNPEI YAMAZAKI	0756-2023	8609

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MCLEAN, VA 22102

EXAMINER

NGUYEN, KEVIN M

ART UNIT	PAPER NUMBER
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2674

12

DATE MAILED: 04/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/385,020

Applicant(s)

YAMAZAKI, SHUNPEI

Examiner

Kevin M. Nguyen

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/5/2002 has been entered. An action on the RCE follows:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specification only discloses figure 1a showing "the liquid crystal display 21 which has a scatterplate 11 and an LED light source 12 arranged in that order behind a transmission type liquid crystal panel 10. As an illumination light source for the transmission type liquid crystal panel 10 an LED light source 12 is used. The LED light source 12 has LED lamps 13 arranged two dimensionally on a substrate 14.... The three-color LED lamps 13R, 13G, 13B are arranged in delta for uniform distribution over the substrate 14" (page 5, line 20 to page

6, line 8). However, application does not disclose expressly where a reflection plate located adjacent to the liquid crystal panel with the light source interposed therebetween. "Figure 4a shows the liquid crystal display 10 having the opposing sides of a reflection type liquid crystal panel 30 are arranged LED light source 31" (page 10, lines 5-8). However, application does not disclose expressly how a reflection plate located adjacent to the liquid crystal panel with light source interposed therebetween, how light source and the reflection plate arranged horizontally with respect to the liquid crystal panel, so as to enable the examiner understanding the claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-14 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al (US 5,896,119) in view of Zhou (US 5,953,469).

6. As to claims 11 and 19, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5). Referring to figure 10, two backlights 52 are arranged on sides of the active matrix display panel 20 in opposite to each other. Therefore, Evanicky et al teaches all of the claimed limitation of claims 11 and 19, except for "each of the light emitting diodes lamps comprises a red light emitting diode (LED), a blue light emitting diode, and a green light emitting diode." However, Zhou teaches a optical panel display having the

light source 60 including and LED array, each element comprising red, green and blue (RGB) sub elements (see figure 3, col. 7, lines 16-19). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the additional red, green and blue-LEDs (60) array taught by Zhou for two backlight (52) of Evanicky et al's display system because this would improve color the brightness for the TFT LCD.

7. As to claims 12 and 20, Zhou teaches the light beam 62a is reflected by an embedded mirror reflector 31 (see figure 3, col. 7, lines 2-3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate an additional mirror reflector 31 taught by Zhou for the TFTLCD of Evanicky et al's system in that order to reflect the light beam.

8. As to claims 13 and 21, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5).

9. Claims 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al in view of Zhou as applied to claims 11-13 and 19-21 above, and further in view of Jacobsen et al (US 6,073,034).

10. As to claims 14 and 22, Evanicky et al and Zhou teach all of the claimed limitations of claims 11-13 and 19-21, except for "the electronic device is selected from the group consisting of a video camera, a digital camera, ..., an electronic book."

However, Jacobsen et al teaches the electronic display device which can be used as a wireless mobile telephone, or alternatively (see col. 2, lines 26-30). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate

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the various electronic display devices taught by Jacobsen et al for the display of Evanicky et al's and Zhou's system because of the usage of TFT-LCD applying to various of electronic display devices.

11. Claim 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al in view of Zhou, and further in view of Okajima et al (US 5,334,993).

12. As to claim 15, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5).

Referring to figure 10, two backlights 52 are arranged on sides of the active matrix display panel 20 in opposite to each other. Evanicky et al fails to teach "each of the light emitting diodes lamps comprises a red light emitting diode (LED), a blue light emitting diode, and a green light emitting diode." However, Zhou teaches a optical panel display having the light source 60 including and LED array, each element comprising red, green and blue (RGB) sub elements (see figure 3, col. 7, lines 16-19). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the additional red, green and blue-LEDs (60) array taught by Zhou for two backlight (52) of Evanicky et al's display system because this would improve color the the brightness for the TFT LCD. Therefore, Evanicky et al and Zhou teach all of the claimed limitations of claim 15, except for "...coated with resin."

However, Okajima et al teaches a LCD having a backlight 111, the light guide plate 13 is made of a flat plate-shaped acrylic resin (see col. 2, lines 43-44). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the additional flat plate-shaped acrylic resin taught by Okajima et al into the display of

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Evanicky et al's and Zhou's system because this would have a uniform display surface and improve display quality.

13. As to claim 16, Zhou teaches the light beam 62a is reflected by an embedded mirror reflector 31 (see figure 3, col. 7, lines 2-3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate an additional mirror reflector 31 taught by Zhou for the TFTLCD of Evanicky et al's and Okajima et al's system in that order to reflect the light beam.

14. As to claim 17, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5).

15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al in view of Zhou and in view of Okajima et al as applied to claims 15-17 above, and further in view of Jacobsen et al (US 6,073,034).

16. As to claim 18, Evanicky et al, Zhou and Okajima et al teach all of the claimed limitations of claims 15-17, except for "the electronic device is selected from the group consisting of a video camera, a digital camera, ..., an electronic book." However, Jacobsen et al teaches the electronic display device which can be used as a wireless mobile telephone, or alternatively (see col. 2, lines 26-30). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the various electronic display devices taught by Jacobsen et al for the display of Evanicky et al's, Zhou's and Okajima et al's system because of the usage of TFT-LCD applying to various of electronic display devices.

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17. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al (US 5,896,119) in view of Zhou (US 5,953,469).

18. As to claim 23, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5). Referring to figure 10, two backlights 52 are arranged on sides of the active matrix display panel 20 in opposite to each other. Therefore, Evanicky et al teaches all of the claimed limitation of claims 11 and 19, except for "each of the light emitting diodes lamps comprises a red light emitting diode (LED), a blue light emitting diode, and a green light emitting diode." However, Zhou teaches a optical panel display having the light source 60 including and LED array, each element comprising red, green and blue (RGB) sub elements (see figure 3, col. 7, lines 16-19). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the additional red, green and blue-LEDs (60) array taught by Zhou for two backlight (52) of Evanicky et al's display system because this would improve color the brightness for the TFT LCD. The light beam 62a is reflected by an embedded mirror reflector 31 having a plurality of inclined surfaces (see figure 3, col. 7, lines 2-3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate an additional mirror reflector 31 taught by Zhou for the TFTLCD of Evanicky et al's system in that order to reflect the light beam.

19. As to claim 24, Zhou teaches the light beam 62a is reflected by an embedded mirror reflector 31 (see figure 3, col. 7, lines 2-3).

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20. As to claim 25, Evanicky et al teaches a thin film transistor (TFT) layer 417, a front supporting glass layer 415b (counter substrate as claimed, see col. 12, lines 2-5).

21. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al in view of Zhou as applied to claims 23-25 above, and further in view of Jacobsen et al (US 6,073,034).

22. As to claim 26, Evanicky et al and Zhou teach all of the claimed limitations of claims 23-25, except for "the electronic device is selected from the group consisting of a video camera, a digital camera, ..., an electronic book." However, Jacobsen et al teaches the electronic display device which can be used as a wireless mobile telephone, or alternatively (see col. 2, lines 26-30). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the various electronic display devices taught by Jacobsen et al for the display of Evanicky et al's and Zhou's system because of the usage of TFT-LCD applying to various of electronic display devices.

23. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al (US 6,073,034).

24. As to claims 11 and 19, Jacobsen et al teaches a LCD flat panel display 110a having an active matrix array 90 (see figure 2A), a LCD 506 (see col. 11, lines 23-25), an LED illumination system 400 shown in figure 7A, blue (B) 402, green (G) 404, and red (R) 406 LEDs are arranged around the periphery of an illumination area of 410 that is positioned adjacent the display active (see col. 11, lines 40-44). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate

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an active matrix 90 of figure 2A and a liquid crystal display 506 of figure 6 for the illumination area of 410 of figure 7A in that order to provide the TFTLCD with a backlight because this would allow to fabricate multiple integrated displays of reduced size to produce a plurality of display devices (see col. 2, lines 15-19).

25. As to claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al (US 6,073,034) in view of Okajima et al.

26. As to claim 15, Jacobsen et al teaches all of the claimed limitation of claim 15, except for "...coated with resin." However, Okajima et al teaches a LCD having a backlight 111, the light guide plate 13 is made of a flat plate-shaped acrylic resin (see col. 2, lines 43-44). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the additional flat plate-shaped acrylic resin taught by Okajima et al into the display of Evanicky et al's and Zhou's system because this would have a uniform display surface and improve display quality.

27. As to claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al (US 6,073,034) in view of Zhou.

28. As to claim 23, Jacobsen et al teaches a LCD flat panel display 110a having an active matrix array 90 (see figure 2A), a LCD 506 (see col. 11, lines 23-25), an LED illumination system 400 shown in figure 7A, blue (B) 402, green (G) 404, and red (R) 406 LEDs are arranged around the periphery of an illumination area of 410 that is positioned adjacent the display active (see col. 11, lines 40-44). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate an active matrix 90 of figure 2A and a liquid crystal display 506 of figure 6 for the

illumination area of 410 of figure 7A in order to provide the TFTLCD with a backlight because this would allow to fabricate multiple integrated displays of reduced size to produce a plurality of display devices (see col. 2, lines 15-19).

Therefore, Evanicky et al teaches all of the claimed limitation of claim 23, except for "a counter substrate has a plurality of inclined surfaces on an opposite side of the active matrix substrate." However, Zhou teaches the light beam 62a is reflected by an embedded mirror reflector 31 having a plurality of inclined surfaces (see figure 3, col. 7, lines 2-3). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate an additional mirror reflector 31 taught by Zhou for the TFTLCD of Evanicky et al's system in that order to reflect the light beam.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-FRI from 9:00-5:00 with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen
Examiner
Art Unit 2674



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600